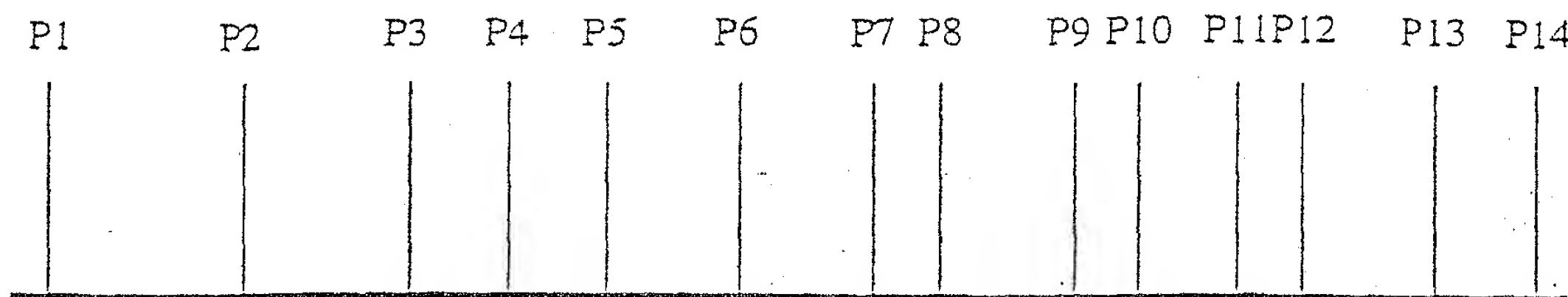
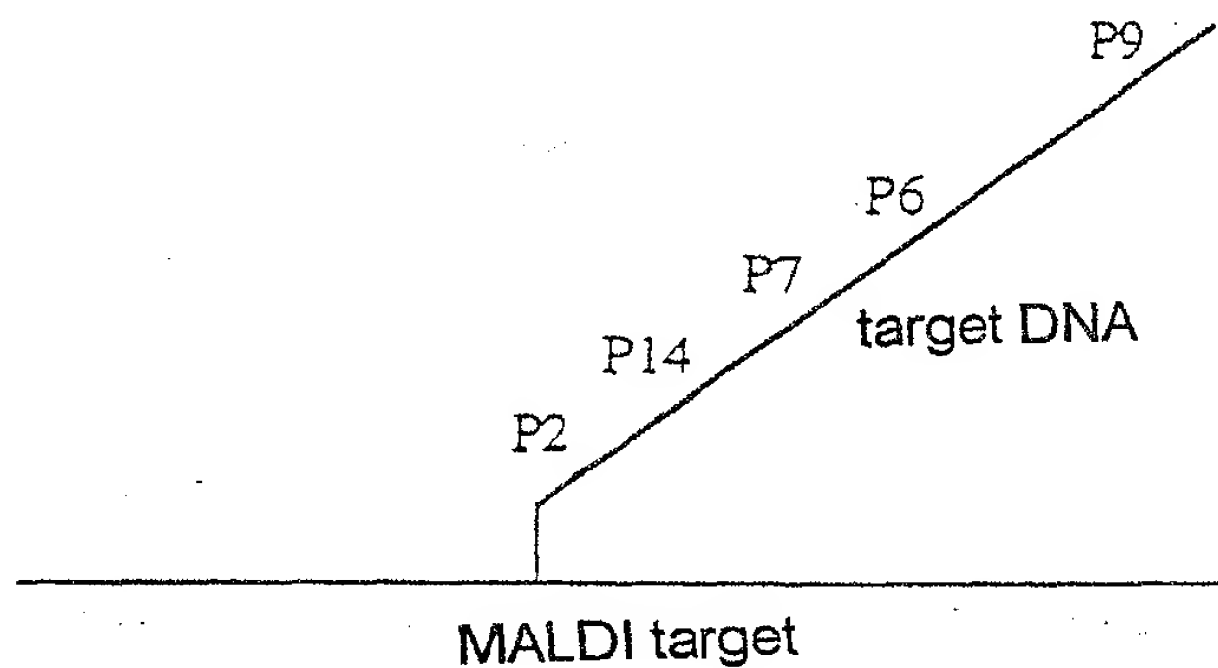


1) Mass distribution of the probes



2) Hybridization



3) Mass distribution of hybridized probes

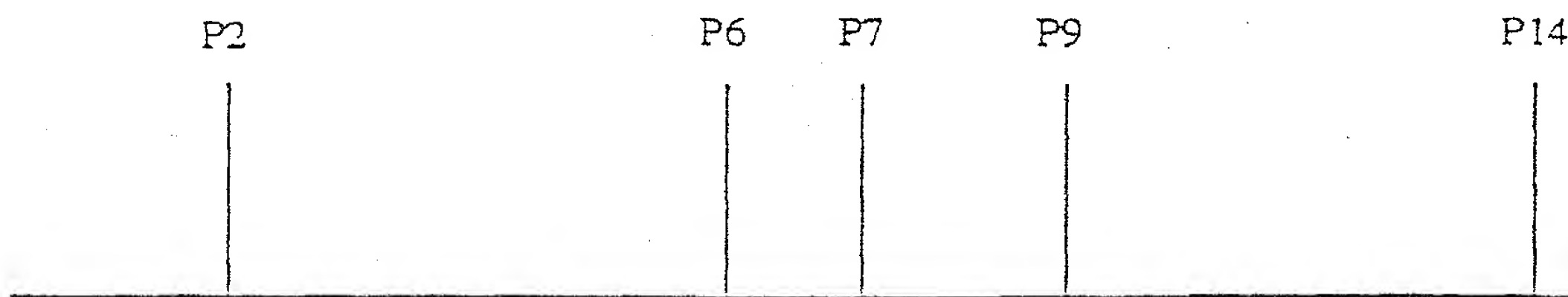


Fig. 1

2/12

Immobilization of DNA directly on the MALDI target (example)

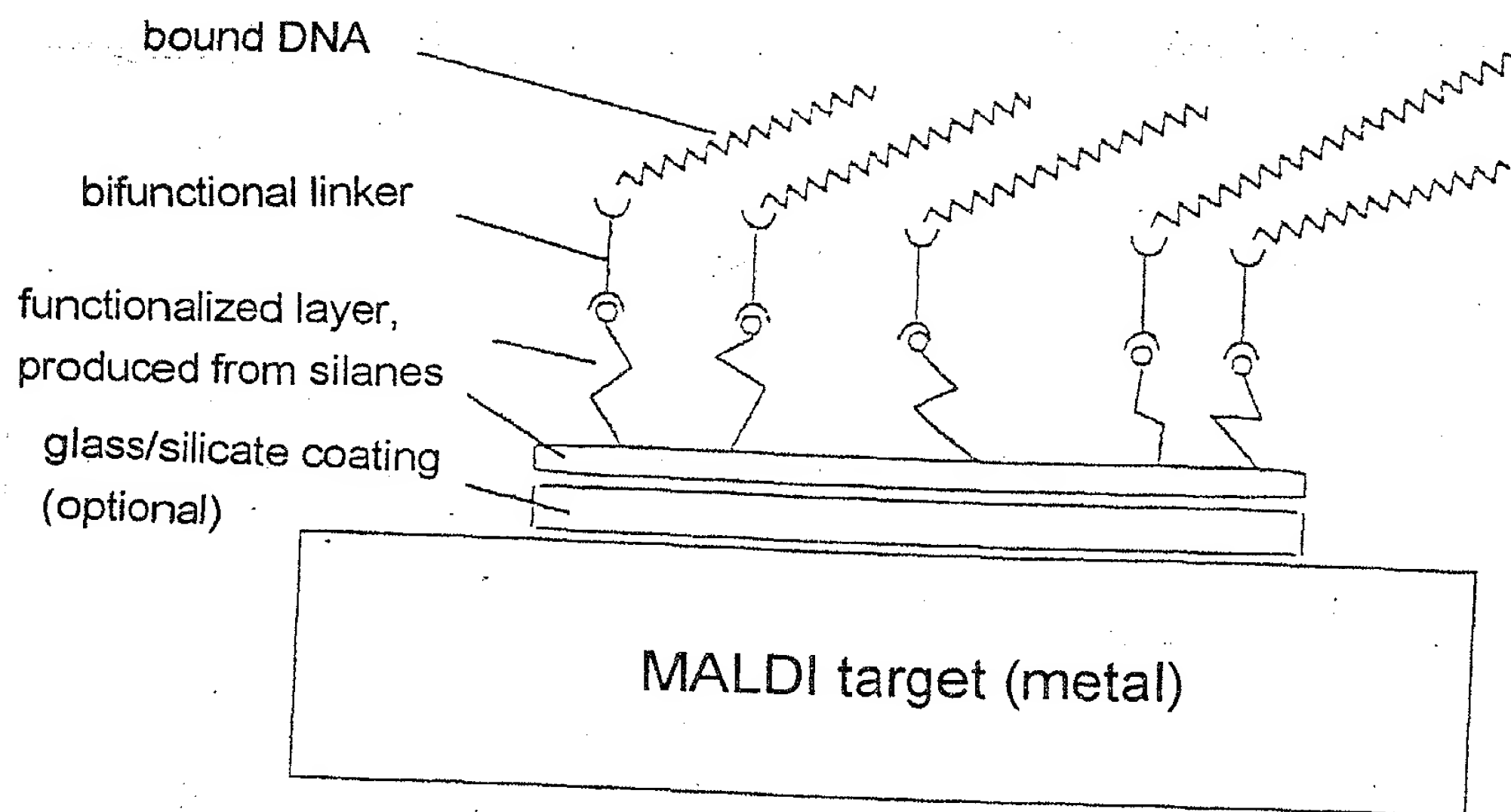
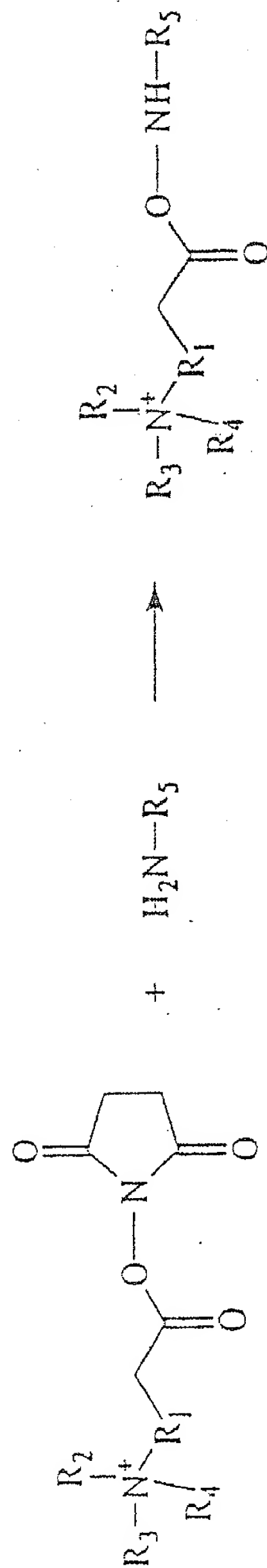


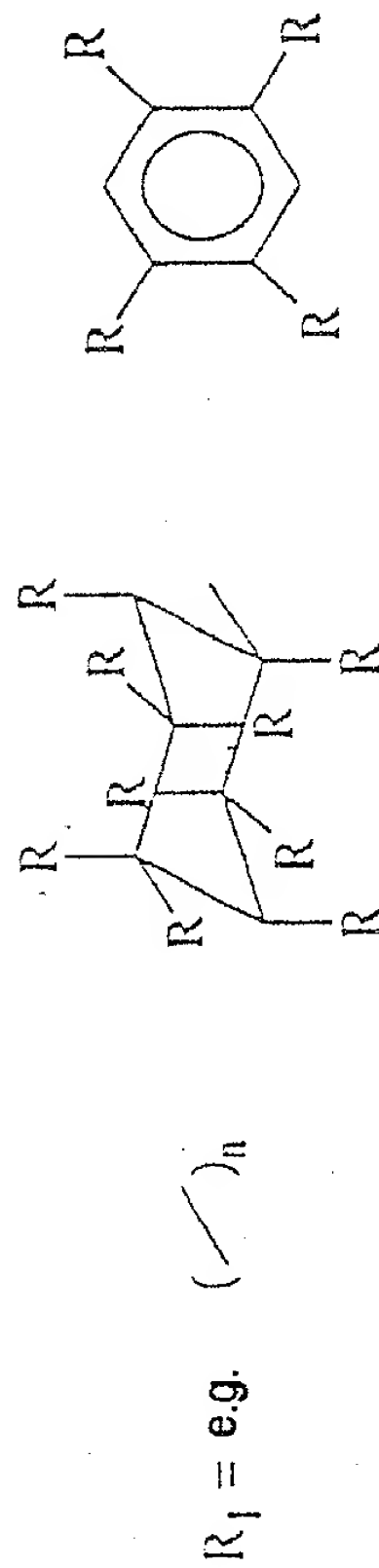
Fig. 2

N-terminal mass/charge tagging

Fig. 3



R = e.g. alkyl, -CH₃, -C₂H₅, -C₃H₇, -C₄H₉ etc.



R₂₋₄ = e.g. alkyl, substituted alkyl

R₅ = e.g. nucleic acid, PNA, methyl phosphonate nucleic acid, phosphorothioate nucleic acids

09/555860

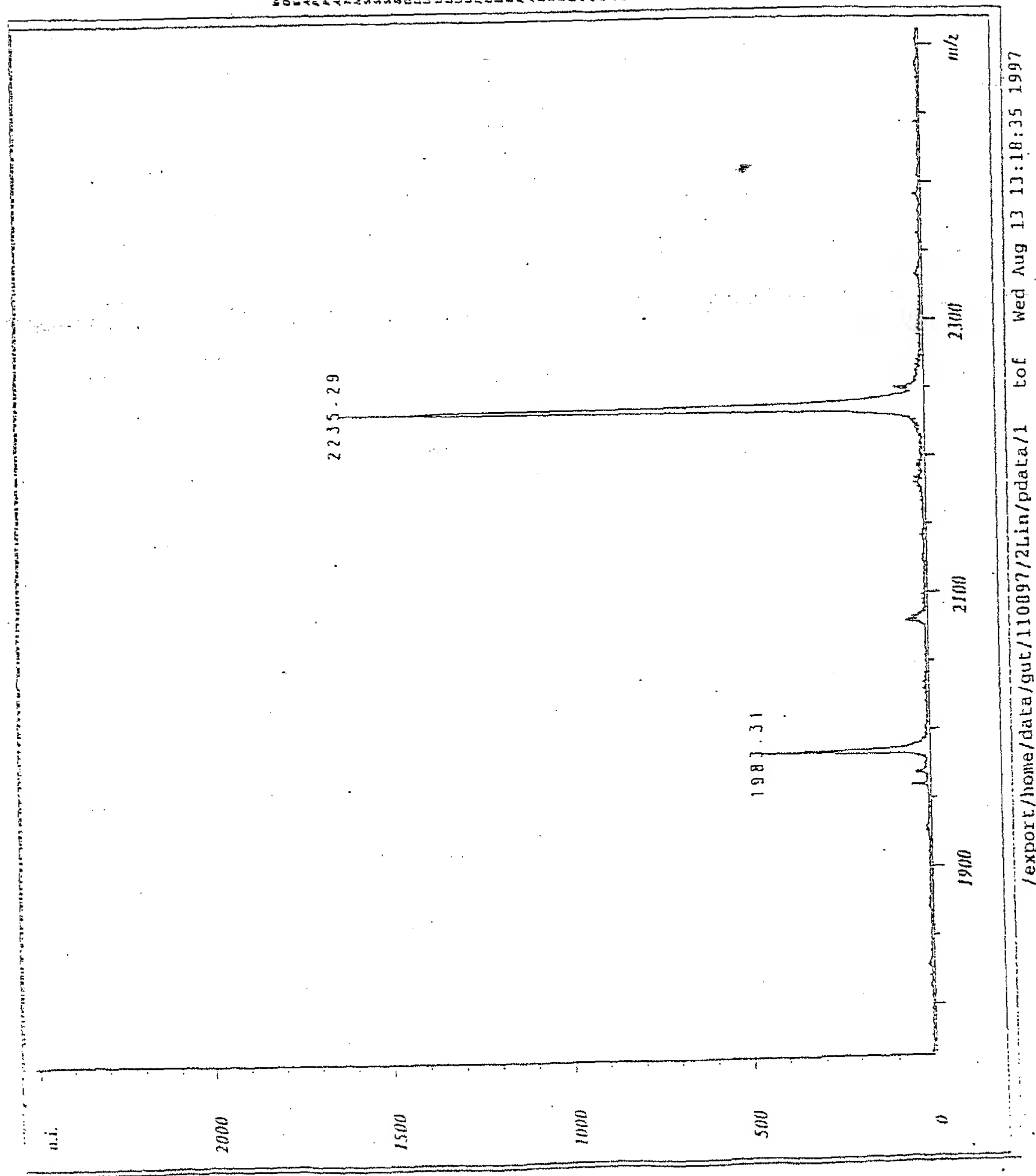
[illegible]

Fig. 4

09/555846

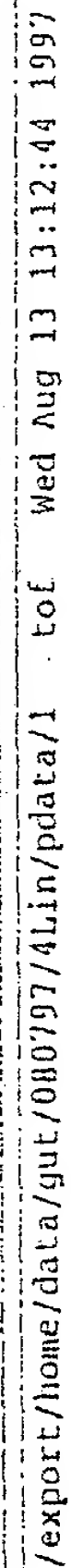
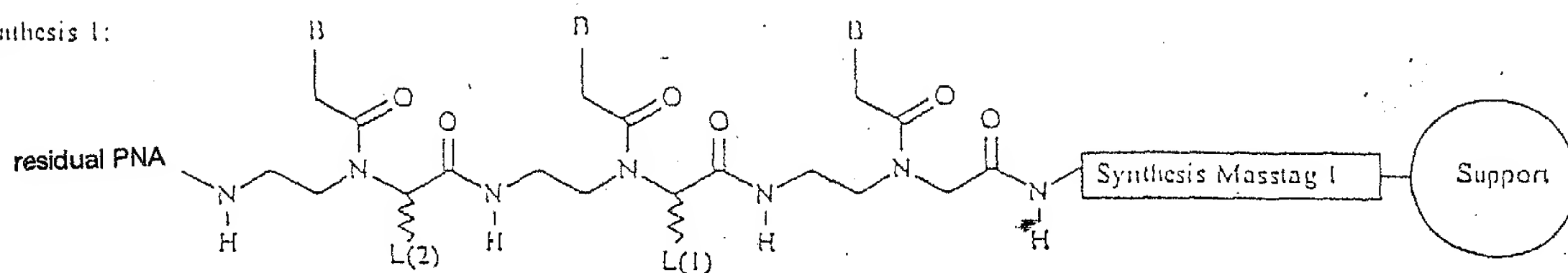
[illegible]

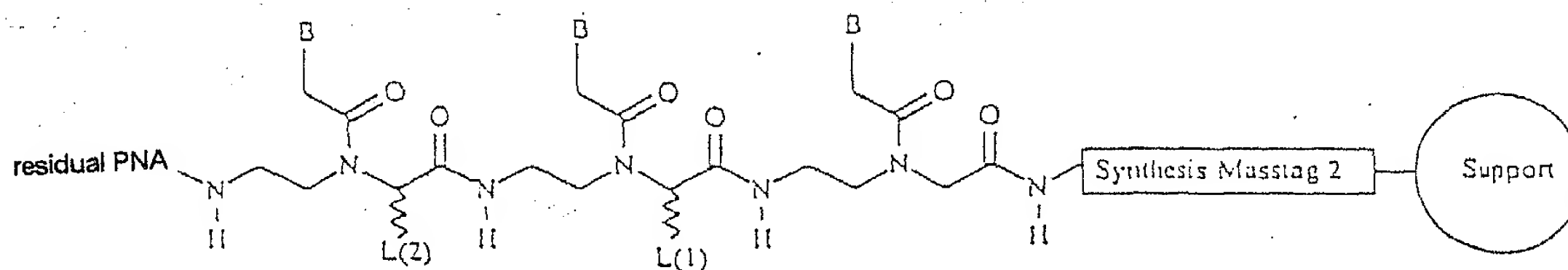
Fig. 6

7/12

Synthesis 1:



Synthesis 2:



....Synthesis n:



designed PNA library with
sequence-specific masses

B = adenine, cytosine, guanine, thymine or purine or pyrimidine derivatives or their deaza analogues

L(n) are various sets of substitutes, chosen specifically for each base which is used in each synthesis step in order to obtain minimized peak overlaps in the MALDI-MS

Fig. 7

8/12

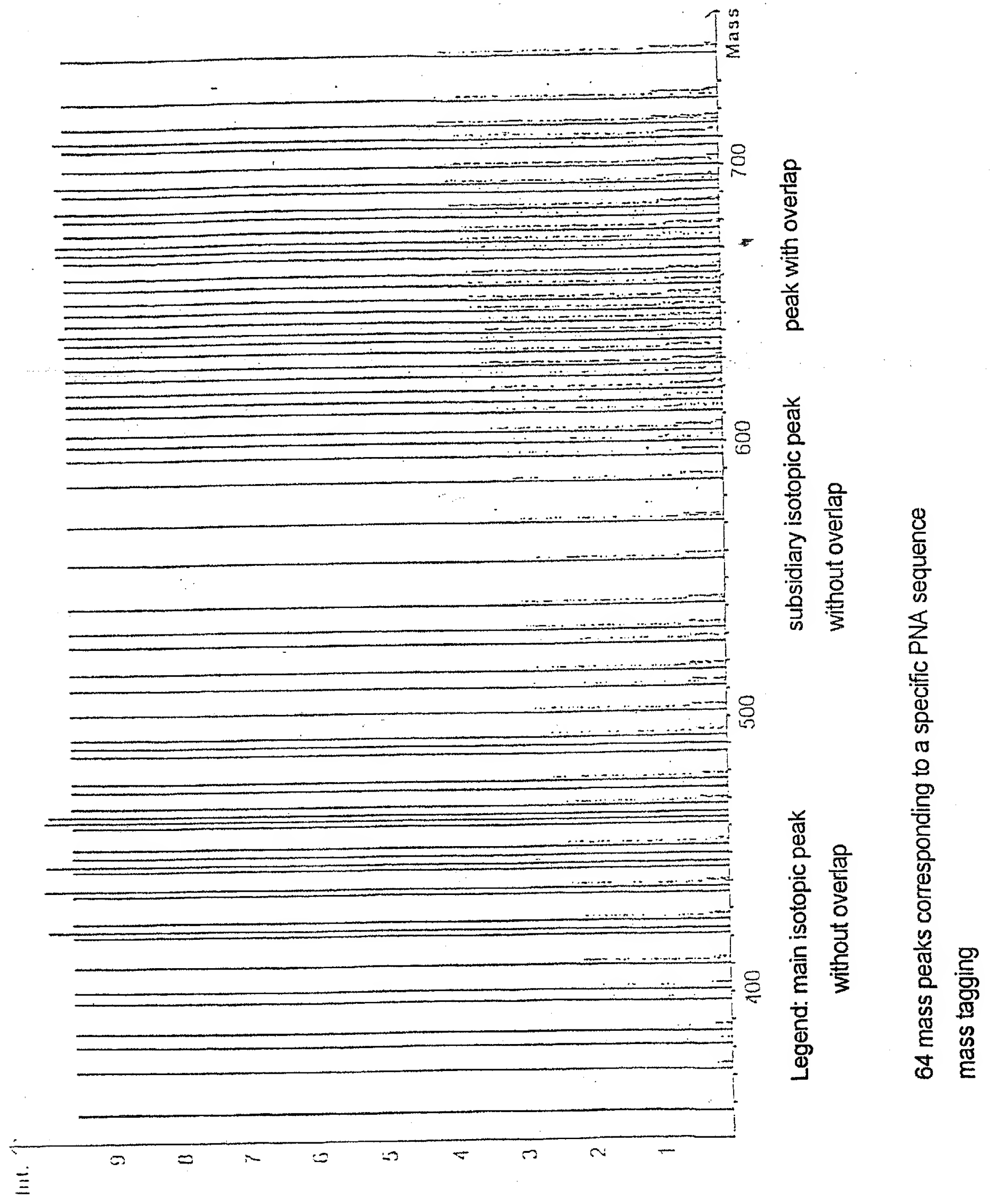


Fig. 8

09/555866

9/12

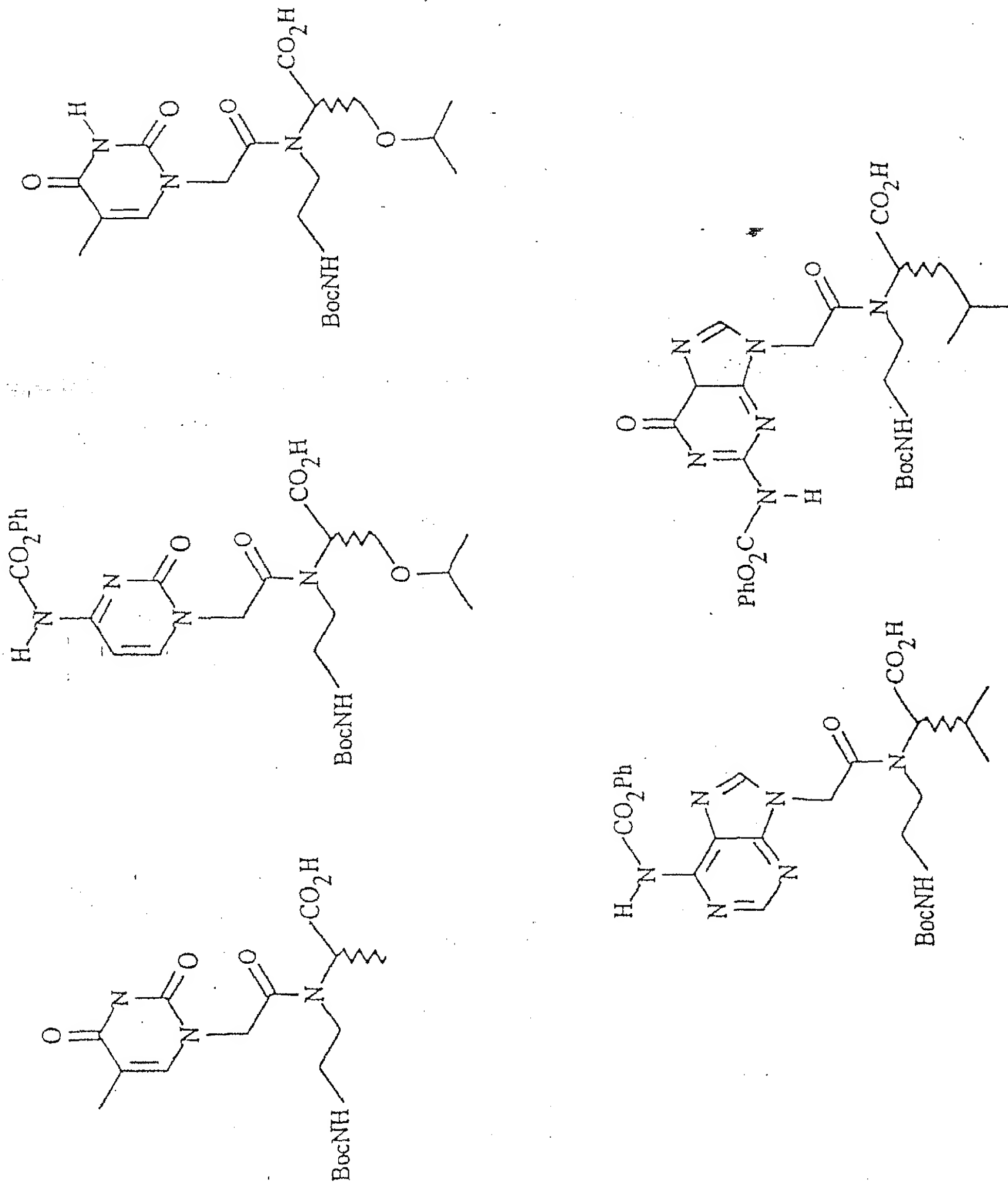


Fig. 9

09/555816

10/12

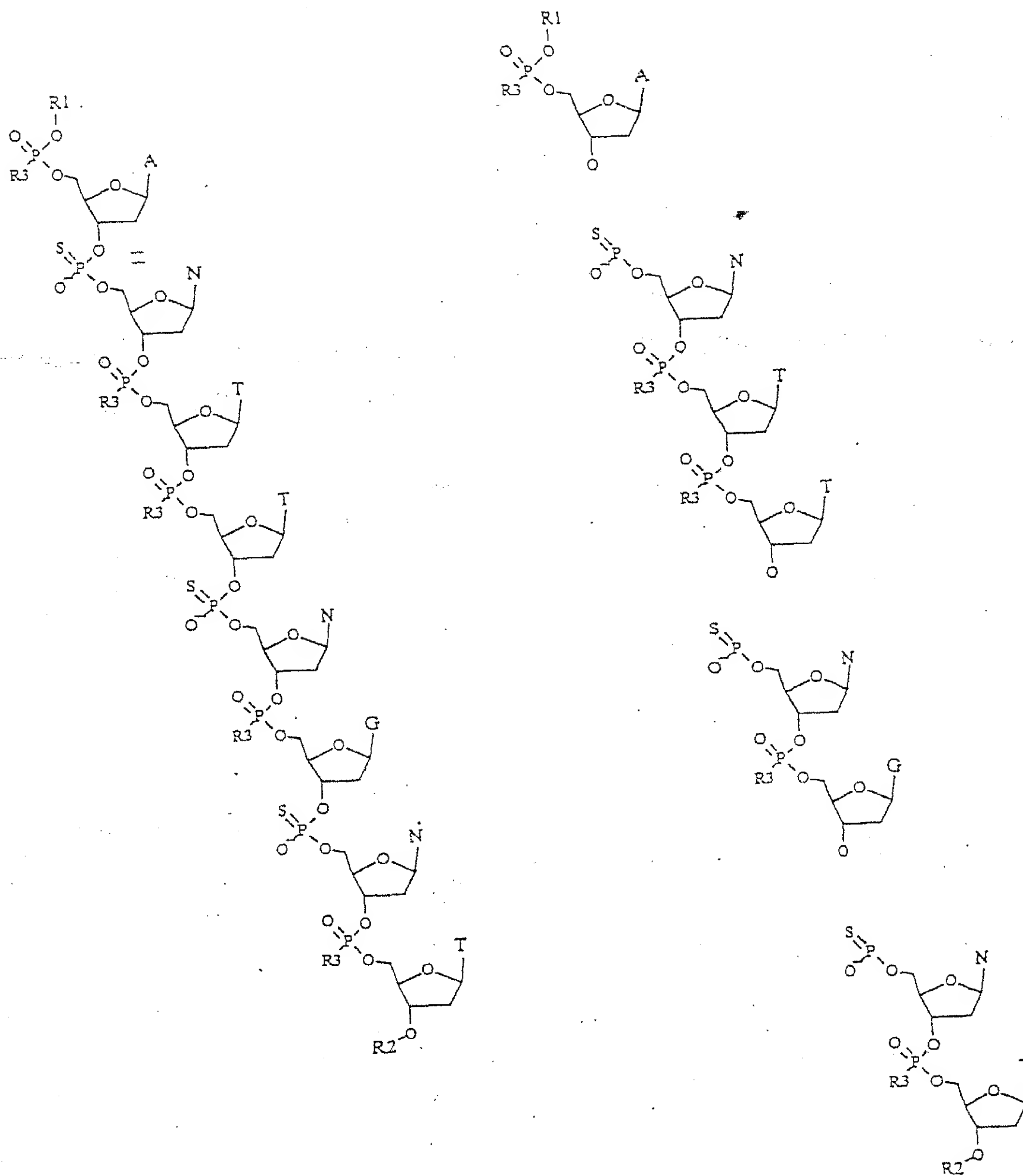
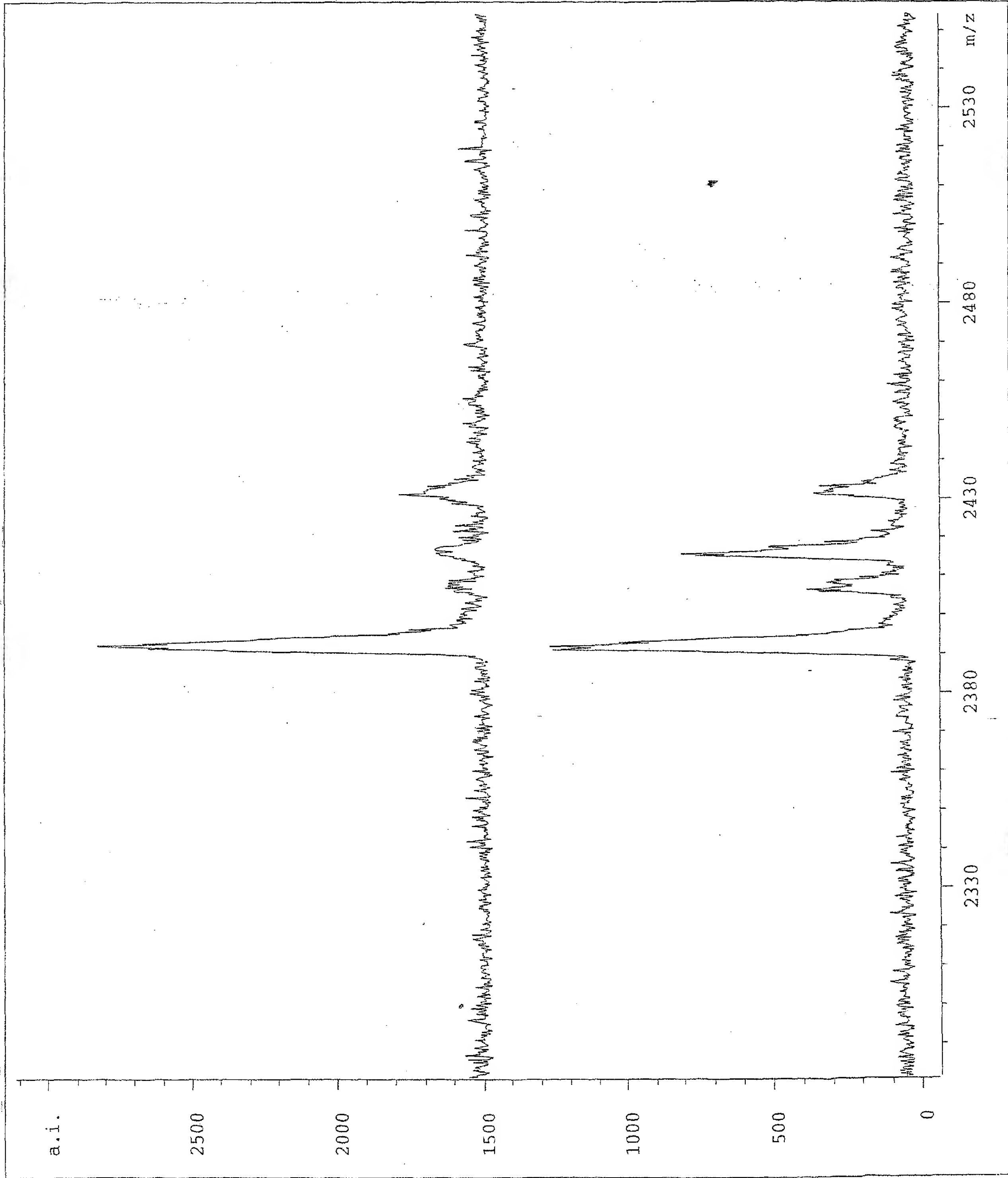


Fig. 10

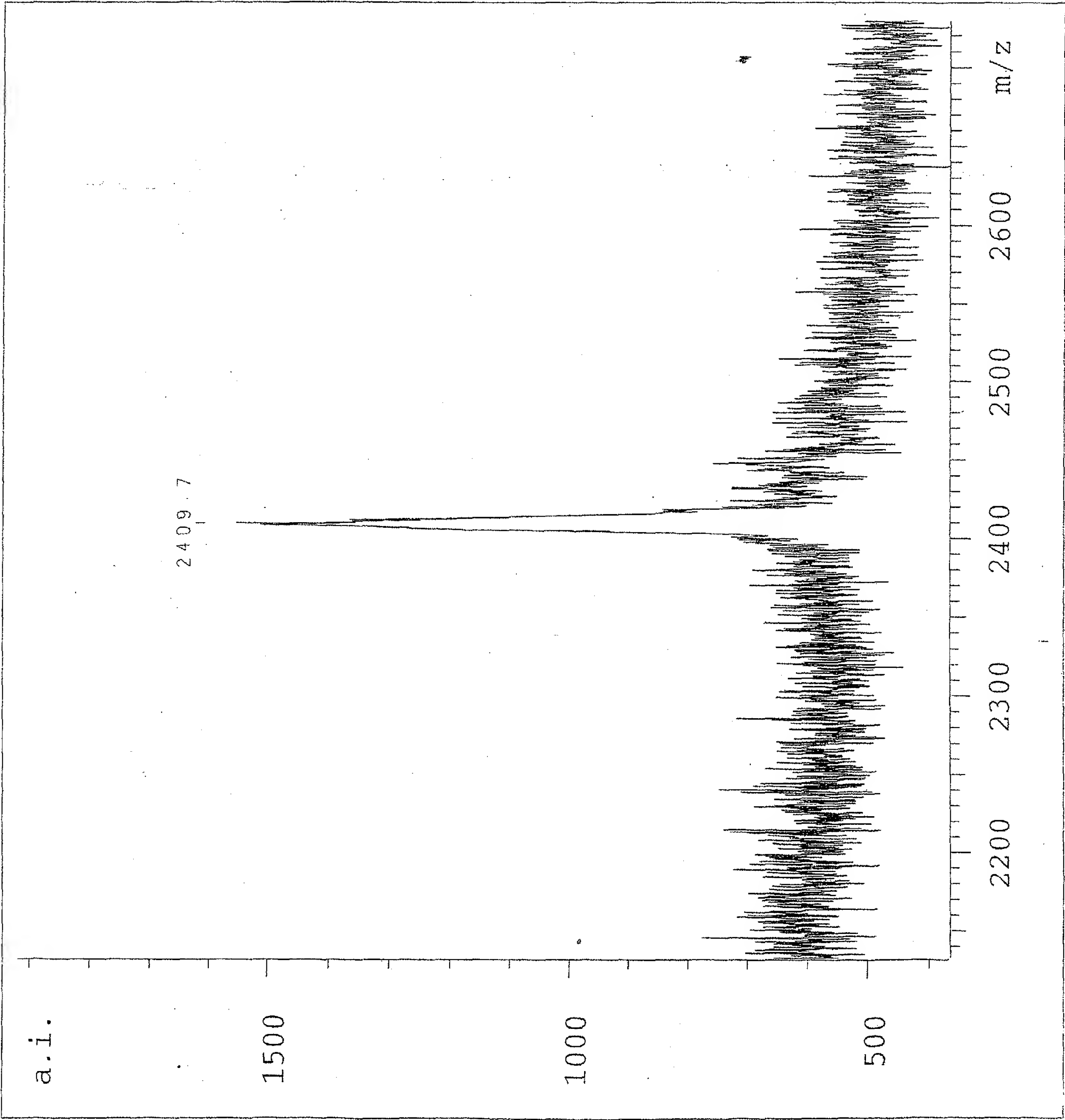
Fig 11



INSTRUM TOP
Opia HCE
SNPRAM 041198
AQ_DATE Wed Nov 4 15:12:34 1998
PATH /export/home/data/ramon
POLARI POS
AQQF_m Linear
TD 35000
NOSHOTS 20
SNGNUM 0
SNGT1 0
SNGT2 0
SNGT3 0
DW 2.00 [ns]
DELAY 0 [ns]
U1s1 20.00 [KV]
U1s2 18.20 [KV]
U1s3 21.00 [KV]
U1s4 7.00 [KV]
U1s5 0.00 [KV]
U1s6 21.00 [KV]
U1s7 1.50 [KV]
U1s8 1.45 [KV]
U1s9 2.00 [KV]
U1s10 3.00 [KV]
U1s11 80.0 [Hz]
ATTEN 1468145.213
ML1 229.476
ML2 0.000
ML3
HITURBO no
CDEON yes
CDELY Short
DEFLO no
ELNSBND no
ELNSBND no
UIS2BND no
DPCALL 1.00
DPHASS 200.00 [Da]
RBNVAL 0.33
LBNVAL 0.28
IS2BNDV 0.91
CMT1 start hybr. C.A and G with some T
CMT2 a-CH (C = compl.)

11/12

0955386 112306 09/555866



Figur 12

INSTRUM TOF
OpId ROE
SHPAM 081098
AC_DATE Thu Oct 8 13:26:15 1998
PATH /export/home/data/ramon
POLARI POS
AQOP_m Linear
TD 30000
NoSHOTS 71
SMOUM 0
SMOITS1 0
SMOITS2 0
SMOITS3 0
DM 2.00 [ns]
DELAY 0 [ns]
Dis1 20.00 [kV]
Dis2 18.20 [kV]
Uref1 21.00 [kV]
Uref2 7.00 [kV]
Uref3 0.00 [kV]
Uref4 21.00 [kV]
RefFull 1.50 [kV]
Uref5 1.45 [kV]
Uref6 2.00 [kV]
Uref7 3.00 [Hz]
REFH2 73.0
ATTEN 1468145.233
ML1 229.476
ML2 0.000
ML3
HITURBO no
GDEON yes
GDELY Short
DEFION no
RINSEND no
LINSEND no
HIS2END no
DPCAL1 1.00
DPHASS 200.00 [Da]
RINOVAL 0.33
LENOVAL 0.28
IS2ENDV 0.51
CMT1 Template immob. on target and hybri. with T-CT
CMT2 a-CN (2)

12/12

09/555866 1.12 09/555866